Rapid PAS Staining Solution

Cat #: A-CSH281

Size: 3×100mL

Storage: 2-8 °C, Avoid exposure to light (1 year)

Product Description

Component	3×100mL	Store at
Reagent (A): Periodic acid solution	100ml	2-8 °C, Avoid exposure to light
Reagent (B): Schiff reagent	100ml	2-8 °C, Avoid exposure to light
Reagent (C): Sulphurous acid solution	100ml	10-30 °C

Periodic Acid-Schiff (PAS) staining is a common staining method in pathology. In 1946, McManus first used the periodic acid-Schiff technique to demonstrate mucins. This method is commonly used to visualize glycogen and other polysaccharides. The PAS staining kit not only stains glycogen but also stains neutral mucinous substances, certain acidic substances, as well as cartilage, pituitary gland, molds, fungi, pigments, amyloid-like substances, and basement membranes. Periodic acid (also known as periodic acid) is a strong oxidizing agent that oxidizes the 1,2-glycol groups in carbohydrates and related substances, converting them into aldehydes. The aldehydes react with Schiff reagent to form a magenta compound, resulting in a purple-red color. However, since periodic acid can also oxidize other substances within the cells, it is important to carefully select the concentration and duration of periodic acid oxidation to ensure controlled oxidation that converts the glycol groups to aldehyde groups without over-oxidation. This step is crucial in the staining process.

The features of the PAS Rapid Staining Solution for glycogen include a unique formulation technology that greatly enhances the staining effect, stability, and high specificity. It is easy to use and requires only around 40 minutes. Compared to conventional PAS staining kits for glycogen, it eliminates the step of staining cell nuclei with hematoxylin, significantly improving work efficiency. It is suitable for both paraffin sections and frozen sections.

Usage

1. Tissue fixation: Paraffin sections are best fixed in Carnoy's fixative and should be fixed at 4° C to avoid polarization. Small tissue blocks should be fixed for 2-3 hours, while larger tissue blocks may require a longer fixation time, but not exceeding 18 hours. After fixation, the tissue can be directly rinsed several times with 95% ethanol, followed by dehydration in absolute alcohol and then embedded in a transparent medium.
2. Deparaffinization: Paraffin sections should be placed in distilled water for dewaxing. Frozen sections can be directly placed in distilled water.
3. Rinse with tap water for 2-3 minutes, followed by two rinses with distilled water.
4. Immerse in periodic acid solution and oxidize at room temperature for 2-5 minutes, generally not exceeding 8 minutes.
5. Rinse with tap water once, followed by two rinses with distilled water.
6. Immerse in Schiff reagent and incubate in a dark place at room temperature for 10-20 minutes (for frozen sections, incubate for 10-15 minutes; for paraffin sections, the incubation time can be extended if necessary).
7. During the above steps, prepare a working solution of sulphurous acid by mixing sulphurous acid solution with distilled water in a ratio of 1:2. Rinse the sections with the sulphurous acid working solution three times, each time for 2 minutes.
8. Rinse with tap water for 5-10 minutes, followed by a final rinse with distilled water.
9. Dehydrate the sections with a series of graded ethanol solutions. Clear in xylene and mount with a neutral mounting medium.

Negative controls (optional):

A.Dissolve 1g of amylase in 100ml of PBS (pH 5.3) and treat for 30-60 minutes. Include these sections in the periodic acid solution together with the other sections. The result should be negative.

B.(Alternative method) Treat saliva-coated slides (filtered) for 30-60 minutes. Include these sections in the periodic acid solution together with the other sections. The result should be negative.

C.(Alternative method) If using a control sample from the same tissue, skip the step of periodic acid solution and directly proceed to Schiff reagent. The result should be negative.

Staining Results

Positive reaction of PAS staining (glycogen or polysaccharides)	Red or purplish-red color
Cell Nucleus	Blue
Cytoplasm	Varying shades of red

Note: The intensity of color largely depends on the duration of the sample's exposure to the periodic acid solution and Schiff reagent.

Notes

1.Deparaffinization of sections should be as thorough as possible to avoid affecting the staining results.

2.The oxidation time with periodic acid should not be excessively long, and the optimal temperature for oxidation is between 18-22° C.

3.The periodic acid solution and Schiff reagent should be stored in a sealed container at 4° C, brought to room temperature before use, and protected from light in a dark area.

4.The duration of exposure to the periodic acid solution and Schiff reagent is crucial and should be determined based on factors such as the thickness of the sections and the type of tissue. The staining time for frozen sections should be kept as short as possible.

Disclaimer

The reagent is only used in the field of scientific research, not suitable for clinical diagnosis or other purposes.